

AUTOMATIC PILL CUTTER

BACKGROUND OF THE INVENTION

FIELD OF THE INVENTION

[0001] This invention relates generally to an improved pill cutter and more particularly to a pill cutter for simultaneously cutting any shape of pills. More particularly, it relates to a pill cutter which can function both to cut simultaneously and to serve as an easily adjustable pill cutter which can easily change for shape or diameter.

STATE OF THE ART

[0002] It is generally well-known that on numerous occasions, particularly with respect to children, that a half or a quarter of a pill is prescribed. Normally, in such an event, an attempt is made to divide the pill by placing it on a support surface and then attempting to cut or split the pill with a sharp instrument such as a knife. Generally, this results in the pill or the pieces thereof being scattered about the immediate area. Anyone who has attempted to split a pill in half, or a quarter, will readily attest to these facts.

[0003] In U.S. Pat. No. 4,173,826 there is disclosed a pill cutter for cutting a pill in half or a quarter. A pill cutter of the type disclosed therein functions very satisfactorily in cutting individual pills one at a time. In many cases, however, it is desired to cut a different shape or diameter without time consuming equipment changes.

SUMMARY OF THE INVENTION

[0004] It is therefore an object of the present invention to provide an improved pill cutter for cutting pills.

[0005] It is another object of the present invention to provide a pill cutter which can cut most shapes and diameters of pills.

[0006] It is a further object of the present invention to cut pills ranging in diameter from 1/8 to 1/2 inch without replacing any parts.

[0007] It is still another object of the invention to provide such a pill cutter which directs the cut pills so that they can be collected at one point.

[0008] It is another object of the present invention to provide a new automatic pill cutting device which may be easily and efficiently manufactured and marketed.

[0009] In accord with these objects which will be discussed in detail below, the pill cutter of the present invention is of a relatively simple construction, including an indexing wheel and left and right hand torsion fingers (LH and RH) which are critical to centering the pill each time it is cut. The indexing wheel holds a variety of pill sizes and pushes the pill out after it is cut.

[0010] The indexing wheel of the present invention also serves multiple uses such as centering the pill and stabilizing the pill or holding it, as the blade moves upward and downward.

[0011] Removing or changing the indexing wheel in the present invention is simple

and quick as it is held down with only a thumb screw. Another unique feature of the present invention is to center and cut the pill automatically after it is simply set on the track and fed in to the device.

BRIEF DESCRIPTION OF THE DRAWINGS

[0012] FIG. 1 is a transparent side elevation view of the left side of an embodiment of the invention; and

[0013] FIG. 2 is a broken transparent plan view illustrating the indexing wheel and the torsion fingers.

DETAILED DESCRIPTION

[0014] Turning now to FIG. 1, a solenoid 1 is provided to move a plunger 3 up and down moving a blade housing 5 attached to a slide 4 which stabilizes a cutting blade 16 placed in a blade slot 6. The pharmaceutical pills are brought into position for cutting by an indexing wheel 8 which is held in place by the thumb screw 7 connected to the indexing wheel shaft 9. The solenoid and the indexing wheel are operated by respective upper and lower switches, both labeled 2.

[0015] FIG. 2 is a top plan view of the indexing wheel 8 and its related functional parts. As shown in Figs. 1 and 2, the indexing wheel 8 is a plate coupled to and rotated by shaft 9. Shaft 9 is turned by a “driven wheel” 14a of a “Geneva drive”. The wheel 14a is driven in an indexed manner by a drive wheel 14b having a drive pin 14c.

[0016] In order to cut a pill, the pill is collected within the indexing wheel flanked by

two angled centering walls 11a, 11b and under a top wall 11c. As wheel 8 rotates, the pill is taken to cutting location 20 where the torsion fingers 10a, 10b help hold the pill in place. While the indexing wheel is stationary with the pill centered at the cutting location 20, the blade 16 is lowered into the cutting groove 15 and cuts the pill. Top wall 11c prevents the pill from flying off the wheel 8 when it is cut. After the pill is cut, the indexing wheel rotates again to bring another pill to the cutting location 20. The sum of the cut pill's parts will push past the torsion fingers 10a, 10b and travel down the pill slide 12 and be collected. As seen in Fig. 2, the torsion fingers 10 include right and left torsion fingers 10a and 10b which will spring back in place after the cut pill pushes past them.

[0017] It should also be appreciated that the centering walls 11a, 11b allow for the accommodation of pills of different size. When the centering walls are adjacent the torsion fingers as seen at the twelve o'clock location in Fig. 2, the pill is embraced between the torsion fingers and the centering walls so that the pill is centered. The overlying wall 11c with cutting groove 15 effectively holds the pill down when it is being cut at the cutting location 20.

[0018] It should also be appreciated that the thumb screw 7 allows the plate 8 to be properly adjusted relative to the drive wheel 14a, or removed and replaced with another plate which can accommodate pills of different size and/or shape.

[0019] There has thus been outlined, rather broadly, the more important features of the invention in order that the present contribution to the art may be better appreciated. In this respect it is to be understood that the invention is not limited in its application to

the details of construction and to the arrangements of the components set forth in the description or illustrated in the drawings. The invention is capable of other embodiments and of being practiced and carried out in various ways. Also, it is to be understood that the phraseology and terminology employed herein are for the purpose of description and should not be regarded as limiting.

[0020] As such, those skilled in the art will appreciate that the conception, upon which this disclosure is based, may readily be utilized as a basis for the designing of other structures, methods and systems for carrying out the several purposes of the present invention. It is important, therefore, that the claims be regarded as including such equivalent constructions insofar as they do not depart from the spirit and scope of the present invention.

[0021] Further, the purpose of the abstract is to enable the U.S. Patent and Trademark Office and the public generally, and especially the scientists, engineers and practitioners in the art who are not familiar with patent or legal terms or phraseology, to determine quickly from a cursory inspection the nature and essence of the technical disclosure of the application. The abstract is neither intended to define the invention of the application, which is measured by the claims, nor is it intended to be limiting as to the scope of the invention in any way.